

## ABSTRACT

The present invention provides a network state machine which supports the three network states of the Home Phone Line Networking Alliance specification version 2.0 (HPNA 2.0) using two network states has been disclosed. When a station is in the V1M2 mode, instead of transmitting this frame in the 10M8 format frame with the gap frame, the frame is transmitted in the 1M8 format frame without any gaps in the frame. With this, the three network state equations of HPNA 2.0 collapses into two equations. With only two network states, the complexity of the network state machine is reduced, and a Physical Layer (PHY) which supports only the two network states may be used.